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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,746	09/06/2006	Noriaki Nagao	27661U	3424

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THE NATH LAW GROUP
112 South West Street
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EXAMINER	
LEE, TOMMY D	
ART UNIT	PAPER NUMBER
2625	
MAIL DATE	DELIVERY MODE
07/08/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/591,746	NAGAO ET AL.	
	Examiner	Art Unit	
	Thomas D. Lee	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 6-8* is/are rejected.

7)☒ Claim(s) *3-5 and 9-11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,104,829 (Nakajima).

Regarding claim 1, Nakajima discloses an image processing device for, when overprinting a multicolor original with a plurality of color inks, converting miltivalued pixel values of a color space corresponding to an image of the multicolor original into miltivalued pixel values of a color space corresponding to the color inks, the image processing device comprising: a color space coordinated conversion unit configured to, with reference to a color conversion LUT which stores relationship between the multivalued pixel values of the color space corresponding to the multicolor original and the multivalued pixel values of the color space corresponding to the color inks, convert the miltivalued pixel values of the color space corresponding to the multicolor original into the miltivalued pixel values of the color space corresponding to the color inks (color converting unit converts input RGB values into L*a*b* values, LUTs convert L*a*b* values into CMYK values, thereby capable of different types of color space compression (column 5, lines 12-28)).

Nakajima further provides a means for assuring that at least one of the miltivalued pixel values of the color space corresponding to the color inks, the miltivalued pixel values being converted based on the color conversion LUT, and the miltivalued pixel values of the color space corresponding to the color inks, the miltivalued pixel values being stored in the color conversion LUT, is correct in accordance with the color inks and an overprint sequence of the color inks (color compression methods selected in accordance with the overprint sequence of inks

during forward and backward passes in bidirectional printing (column 14, lines 6-28; lines 41-52)). While the pixel values are not corrected from an incorrect value by a correction unit, it would have been obvious to one of ordinary skill in the art that the teaching of Nakajima serves the same purpose in that a color conversion LUT is selected on the basis of the color ink overprint sequence, so that the output multivalued pixel values are correct. Providing a means for selecting one of multiple LUTs for outputting a correct value, as taught by Nakajima, and providing a means for manipulating the value output from a single LUT for outputting the correct value, as recited in Applicant's claims, are equally well known methods for determining a correct value of an output pixel. Thus, replacing one method with the other method would have been an obvious modification to one of ordinary skill in the art.

Claim 6 recites an image processing method corresponding to the image processing device recited in claim 1. The method steps are taught by, or would have been obvious in view of, Nakajima for the reasons set forth above.

Claim 7 differs from claim 6 only in that the color conversion LUT is corrected prior to the conversion of miltivalued pixel values. As mentioned above regarding claim 1, Nakajima discloses selection of a color conversion LUT from among a plurality of LUTs to provide the corrected pixel values in accordance with an overprint sequence of color inks. Selection of an appropriate color conversion LUT is functionally equivalent to correction of a singular color conversion LUT for outputting the output pixel values, for both methods serve the purpose of providing a corrected output value in accordance with the overprint sequence of color inks. Providing a means for selecting one of

multiple LUTs for outputting a correct value, as taught by Nakajima, and providing a means for manipulating the value output of a single LUT for outputting the correct value, as recited in Applicant's claims, are equally well known methods for determining a correct value of an output pixel. Thus, replacing one method with the other method would have been an obvious modification to one of ordinary skill in the art.

Claim 8 recites a printer driver of a printing machine, corresponding to the image processing device recited in claim 1. The image processing apparatus taught by Nakajima includes an output unit (Fig. 1), which is an ink-jet printer (column 6, lines 8-14).

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima as applied to claim 1 above, and further in view of U.S. Patent 5,687,300 (Cooper).

Regarding claim 2, Nakajima discloses color conversion LUTs that store the relationship between the miltivalued pixel values of the color space corresponding to the multicolor original and the miltivalued pixel values of the color space corresponding to the color inks (LUTs convert L*a*b* values into CMYK values, thereby capable of different types of color space compression (column 5, lines 12-28)).

Nakajima is silence with regard to a relationship being for the case where both or one of a trapping phenomenon and a back-trapping phenomenon does not occur when the color inks are overprinted. However, Cooper noted that color separation in commercial printing has to account for variable ink trap depending on the order of color, and uses LUTs to compensate for such problems (column 8, lines 9-28). This method effectively reduces the variable ink trap, thereby resulting in an enhancement in the

quality of an output image, and thus it would have been obvious for one of ordinary skill in the art to modify the teaching of Nakajima by providing LUTs that account for the trapping phenomenon, as taught by Cooper.

Allowable Subject Matter

6. Claims 3-5 and 9-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: No prior art has been found to disclose or suggest an image processing device of Applicant's claims 1 and 8, "wherein, when the multivalued pixel values of the color space corresponding to a later-printed color ink are equal to or more than a predetermined threshold value, the correction unit calculates a correction factor from the threshold value and the multivalued pixel values of the color space corresponding to the later-printed color ink according to the overprint sequence, and by using the calculated correction factor, corrects the multivalued pixel values of the color space corresponding to a previously-printed color ink.," as recited in claims 3 and 9; or " wherein the correction unit calculates a correction factor from the multivalued pixel values of the color space corresponding to a previously-printed color ink and a trapping rate of a later-printed color ink according to the overprint sequence, and by using the calculated correction factor, corrects the multivalued pixel values of the color space corresponding to the later-printed color ink," as recited in claims 4 and 10; or "wherein the correction unit calculates a correction factor from the multivalued pixel values of the color space

corresponding to a later-printed color ink and a back-trapping rate of a previously-printed color ink according to the overprint sequence, and by using the calculated correction factor, corrects the miltivalued pixel values of the color space corresponding to the previously-printed color ink," as recited in claims 5 and 11.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas D. Lee whose telephone number is (571) 272-7436. The examiner can normally be reached on Monday-Friday, 7:30-5:00, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward L. Coles can be reached on (571) 272-7402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thomas D Lee/
Primary Examiner, Art Unit 2625